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(54) **DEVICE AND METHOD OF HANDLING A SIGNALING RADIO BEARER FOR NARROWBAND INTERNET OF THINGS COMMUNICATION**

(57) A communication device for handling a signaling radio bearer (SRB) for a narrowband internet of things (NB-IoT) communication comprises a storage device for storing instructions and a processing circuit coupled to the storage device. The processing circuit is configured to execute the instructions stored in the storage device. The instructions comprise receiving a RRCConnectionReconfiguration-NB message from a network, when the communication device is in a RRC_CONNECTED mode, wherein the RRCConnectionReconfiguration-NB message indicates a first full configuration and comprises a first SRB configuration; and applying a default SRB configuration, a default RLC configuration and a default logical channel configuration for a SRB 1 (SRB1) according to the SRB configuration, when receiving the RRCConnectionReconfiguration-NB message.

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Description

Background of the Invention

1. Field of the Invention

[0001] The present invention relates to a device and a method used in a wireless communication system, and more particularly, to a device and a method of handling a signaling radio bearer for a narrowband Internet of Things (NB-IoT) communication.

2. Description of the Prior Art

[0002] In a long-term evolution (LTE) system, a radio access network known as an evolved universal terrestrial radio access network (E-UTRAN) includes at least one evolved Node-B (eNB) for communicating with a user equipment (UE), and for communicating with a core network. The core network may include mobility management and Quality of Service (QoS) control for the UE.

Summary of the Invention

[0003] The present invention therefore provides a communication device and method for handling a signaling radio bearer for a narrowband Internet of Things (NB-IoT) communication to specify undefined operations of the NB-IoT communication.

[0004] A communication device for handling a signaling radio bearer (SRB) for a narrowband internet of things (NB-IoT) communication comprises a storage device for storing instructions and a processing circuit coupled to the storage device. The processing circuit is configured to execute the instructions stored in the storage device. The instructions comprise receiving a RRCConnectionReconfiguration-NB message from a network, when the communication device is in a RRC_CONNECTED mode, wherein the RRCConnectionReconfiguration-NB message indicates a first full configuration and comprises a first SRB configuration; and applying a default SRB configuration, a default RLC configuration and a default logical channel configuration for a SRB 1 (SRB1) according to the SRB configuration, when receiving the RRCConnectionReconfiguration-NB message.

[0005] A communication device for handling a signaling radio bearer (SRB) for a narrowband internet of things (NB-IoT) communication comprises a storage device for storing instructions and a processing circuit coupled to the storage device. The processing circuit is configured to execute the instructions stored in the storage device. The instructions comprise receiving a RRC connection reconfiguration message from a network, when the communication device is in a RRC_CONNECTED mode, wherein the RRC connection reconfiguration message indicates a full configuration and comprises a SRB configuration; checking whether there is any srb-Identity value comprised in the SRB configuration or not, after receiving the RRC connection reconfiguration message; applying a default SRB configuration, a default RLC configuration and a default logical channel configuration for at least one SRB according to at least one srb-Identity value in the SRB configuration, when there is the at least one srb-Identity value comprised in the SRB configuration; and applying the default SRB configuration, the default RLC configuration and the default logical channel configuration for a SRB1, when there is no srb-Identity value comprised in the SRB configuration.

[0006] A communication device for handling a signaling radio bearer (SRB) for a narrowband internet of things (NB-IoT) communication comprises a storage device for storing instructions and a processing circuit coupled to the storage device. The processing circuit is configured to execute the instructions stored in the storage device. The instructions comprise receiving a RRC connection reconfiguration message from a network, when the communication device is in a RRC_CONNECTED mode, wherein the RRC connection reconfiguration message indicates a full configuration and comprises a SRB configuration; checking whether the SRB configuration is a srb-ToAddModList or a srb-ToAddModList-NB, after receiving the RRC connection reconfiguration message; applying a default SRB configuration, a default RLC configuration and a default logical channel configuration for at least one SRB according to at least one srb-Identity value in the SRB configuration, if the SRB configuration is the srb-ToAddModList; and applying the default SRB configuration, the default RLC configuration and the default logical channel configuration for a SRB1, if the SRB configuration is the srb-ToAddModList-NB.

[0007] These and other objectives of the present invention will no doubt become obvious to those of ordinary skill in the art after reading the following detailed description of the preferred embodiment that is illustrated in the various figures and drawings.

Brief Description of the Drawings

[0008]

Fig. 1 is a schematic diagram of a wireless communication system according to an example of the present invention.

Fig. 2 is a schematic diagram of a communication device according to an example of the present invention.

Fig. 3 is a flowchart of a process according to an example of the present invention.

Fig. 4 is a flowchart of a process according to an example of the present invention.

Fig. 5 is a flowchart of a process according to an example of the present invention.

Fig. 6 is a flowchart of a process according to an example of the present invention.

Detailed Description

[0009] Fig. 1 is a schematic diagram of a wireless communication system 10 according to an example of the present invention. The wireless communication system 10 is briefly composed of a network and a plurality of communication devices. The network and a communication device communicate with each other via one or more cells on one or more carriers of licensed band(s) and/or unlicensed band(s). The one or more cells may be operated in the same or different frame structure types, or in the same or different duplexing modes, i.e. frequency-division duplexing (FDD) and time-division duplexing (TDD).

[0010] In Fig. 1, the network and the communication devices are simply utilized for illustrating the structure of the wireless communication system 10. The network may include a radio access network (RAN) including at least one base station (BS). Practically, the RAN may be an evolved universal terrestrial radio access network (E-UTRAN) including at least one evolved Node-B (eNB). The RAN may be a fifth generation (5G) network including at least one 5G BS (e.g., gNB) which employs orthogonal frequency-division multiplexing (OFDM) and/or non-OFDM and a transmission time interval (TTI) shorter than 1 ms (e.g. 100 or 200 microseconds), to communicate with the communication devices. In general, a BS may also be used to refer any of the eNB and the 5G BS. Furthermore, the network may also include a core network which includes network entities connecting to the RAN.

[0011] A communication device may be a user equipment (UE), a narrowband Internet of Things (NB-IoT) UE, a machine type communication (MTC) device, a mobile phone, a laptop, a tablet computer, an electronic book, a portable computer system, a vehicle, or an aircraft. In addition, the network and the communication device can be seen as a transmitter or a receiver according to direction (i.e., transmission direction), e.g., for an uplink (UL), the communication device is the transmitter and the network is the receiver, and for a downlink (DL), the network is the transmitter and the communication device is the receiver.

[0012] Fig. 2 is a schematic diagram of a communication device 20 according to an example of the present invention. The communication device 20 may be a communication device or the network shown in Fig. 1, but is not limited herein. The communication device 20 may include a processing circuit 200 such as a microprocessor or Application Specific Integrated Circuit (ASIC), a storage device 210 and a communication interfacing device 220. The storage device 210 may be any data storage device that may store a program code 214, accessed and executed by the processing circuit 200. Examples of the storage device 210 include but are not limited to a subscriber identity module (SIM), read-only memory (ROM), flash memory, random-access memory (RAM), hard disk, optical data storage device, non-volatile storage device, non-transitory computer-readable medium (e.g., tangible media), etc. The communication interfacing device 220 includes a transceiver and is used to transmit and receive signals (e.g., data, messages and/or packets) according to processing results of the processing circuit 200.

[0013] In the following embodiments, a UE is used to represent a communication device in Fig. 1, to simplify the illustration of the embodiments.

[0014] A scenario assumed according to an example of the present invention is stated as follows. After receiving a RRC connection reconfiguration message from an eNB and a fullconfig is set to TRUE, the UE applies default radio resource configurations. Based on a srb-Identity value included in a receiving srb-ToAddModList, the UE reconfigures corresponding signalling radio bearers (SRBs) to default values. However, the situation is different for a narrowband Internet of Things (NB-IoT) communication. The eNB does not include any srb-Identity value in a srb-ToAddModList-NB for a NB-IoT UE. Accordingly, the NB-IoT UE does not know how to operate, after receiving a RRC connection reconfiguration message for a full configuration. Thus, operations of the NB-IoT UE should be defined.

[0015] Fig. 3 is a flowchart of a process 30 according to an example of the present invention. The process 30 may be utilized in a UE to communicate with a BS (e.g., in the network in Fig. 1), and includes the following steps:

Step 300: Start.
Step 302: Receive a RRCConnectionReconfiguration-NB message from a network, when the communication device is in a RRC_CONNECTED mode, wherein the RRCConnectionReconfiguration-NB message indicates a first full configuration and comprises a first SRB configuration.
Step 304: Apply a default SRB configuration, a default RLC configuration and a default logical channel configuration for a SRB 1 (SRB1) according to the SRB configuration, when receiving the RRCConnectionReconfiguration-NB message. Step 306: End.

[0016] According to the process 30, a UE in RRC_CONNECTED mode receives a RRCConnectionReconfiguration-NB message from a network. The RRCConnectionReconfiguration-NB message may indicate a first full configuration (e.g., the RRCConnectionReconfiguration-NB message includes fullConfig set to TRUE), and may comprise a first SRB configuration (e.g., srb-ToAddModList-NB). It should be noted that the SRB configuration may not include a SRB identity (e.g., srb-ToAddModList-NB does not include a srb-Identity). When receiving the RRCConnectionReconfiguration-NB message from the network, the UE applies a default SRB configuration, a default RLC configuration and a default logical channel configuration for a SRB1.

[0017] In one example, the UE receives a RRCConnectionReconfiguration message from the network. The

RRCConnectionReconfiguration message indicates a second full configuration (e.g., the RRCConnectionReconfiguration message includes a "fullConfig" set to TRUE), and includes a second SRB configuration (e.g., srb-ToAddModList), wherein the second SRB configuration includes at least one SRB identity (e.g., srb-ToAddModList includes at least one srb-Identity). According to the at least one SRB identity included in the second SRB configuration, the UE applies the default SRB, the default RLC and the default logical channel configuration for at least one SRB (e.g., which is corresponding to the at least one SRB identity).

[0018] In one example, the UE is a NB-IoT UE or a LTE UE that supports at least one NB-IoT capability. In one example, the UE further applies the default SRB configuration, the default RLC configuration and the default logical channel configuration for all SRBs supported by the UE.

[0019] Fig. 4 is a flowchart of a process 40 according to an example of the present invention. The process 40 may be utilized in a UE to communicate with a BS (e.g., in the network in Fig. 1), and includes the following steps:

Step 400: Start.

Step 402: Receive a RRC connection reconfiguration message from a network, when the communication device is in a RRC_CONNECTED mode, wherein the RRC connection reconfiguration message indicates a full configuration and comprises a SRB configuration.

Step 404: Checking whether there is any srb-Identity value comprised in the SRB configuration or not, after receiving the RRC connection reconfiguration message.

Step 406: Apply a default SRB configuration, a default RLC configuration and a default logical channel configuration for at least one SRB according to at least one srb-Identity value in the SRB configuration, when there is the at least one srb-Identity value comprised in the SRB configuration.

Step 408: Apply the default SRB configuration, the default RLC configuration and the default logical channel configuration for a SRB1, when there is no srb-Identity value comprised in the SRB configuration.

Step 410: End.

[0020] According to the process 40, a UE in a RRC_CONNECTED mode receives a RRC connection reconfiguration message from a network. The RRC connection reconfiguration message may indicate a full configuration (e.g., the RRC connection reconfiguration message includes a "fullConfig" set to TRUE), and may comprise a SRB configuration. After receiving the RRC connection reconfiguration message from the network, the UE checks whether there is any srb-Identity value comprised in the SRB configuration or not. When there is at least one srb-Identity value comprised in the SRB configuration, the UE applies a default SRB configuration, a default RLC configuration and a default logical channel configuration for at least one SRB according to (e.g., corresponding to) the at least one srb-Identity value. When there is no srb-Identity value in the SRB configuration, the UE applies the default SRB configuration, the default RLC configuration and the default logical channel configuration for a SRB1.

[0021] In one example, the RRC connection reconfiguration message is a RRCConnectionReconfiguration message or a RRCConnectionReconfiguration-NB message. In one example, the SRB configuration is a srb-ToAddModList or a srb-ToAddModList-NB. In one example, the UE is a NB-IoT UE or a LTE UE that supports at least one NB-IoT capability. In one example, the UE further applies the default SRB configuration, the default RLC configuration and the default logical channel configuration for all SRBs supported by the UE.

[0022] Fig. 5 is a flowchart of a process 50 according to an example of the present invention. The process 50 may be utilized in a UE to communicate with a BS (e.g., in the network in Fig. 1), and includes the following steps:

Step 500: Start.

Step 502: Receive a RRC connection reconfiguration message from a network, when the communication device is in a RRC_CONNECTED mode, wherein the RRC connection reconfiguration message indicates a full configuration and comprises a SRB configuration.

Step 504: Check whether the RRC connection reconfiguration message is a RRCConnectionReconfiguration message or a RRCConnectionReconfiguration-NB message, after receiving the RRC connection reconfiguration message.

Step 506: Apply a default SRB configuration, a default RLC configuration and a default logical channel configuration for at least one SRB according to at least one srb-Identity value in the SRB configuration, if the RRC connection reconfiguration message is the RRCConnectionReconfiguration message.

Step 508: Apply the default SRB configuration, the default RLC configuration and the default logical channel configuration for a SRB1, if the RRC connection reconfiguration message is the RRCConnectionReconfiguration-NB message.

Step 510: End.

[0023] According to the process 50, a UE in a RRC_CONNECTED mode receives a RRC connection reconfiguration message from the network. The RRC connection reconfiguration message indicates a full configuration (e.g., the message comprises a "fullConfig" set to TRUE), and comprises a SRB configuration. After receiving the RRC connection reconfiguration message from the network, the UE checks whether the RRC connection reconfiguration message is a RRCConnectionReconfiguration message or a RRCConnectionRecon-

figuration-NB message. If the RRC connection reconfiguration message is the RRCConnectionReconfiguration message, the UE applies a default SRB configuration, a default RLC configuration and a default logical channel configuration for at least one SRB according to (e.g., corresponding to) at least one srb-Identity value in the SRB configuration. If the RRC connection reconfiguration message is the RRCConnectionReconfiguration-NB message, the UE applies the default SRB configuration, the default RLC configuration and the default logical channel configuration for a SRB1.

[0024] In one example, the UE is a NB-IoT UE or a LTE UE that supports at least one NB-IoT capability. In one example, the UE further applies the default SRB configuration, the default RLC configuration and the default logical channel configuration for all SRBs supported by the UE. In one example, the SRB configuration is a srb-ToAddModList or a srb-ToAddModList-NB.

[0025] Fig. 6 is a flowchart of a process 60 according to an example of the present invention. The process 60 may be utilized in a UE to communicate with a BS (e.g., in the network in Fig. 1), and includes the following steps:

Step 600: Start.
Step 602: Receive a RRC connection reconfiguration message from a network, when the communication device is in a RRC_CONNECTED mode, wherein the RRC connection reconfiguration message indicates a full configuration and comprises a SRB configuration.
Step 604: Check whether the SRB configuration is a srb-ToAddModList or a srb-ToAddModList-NB, after receiving the RRC connection reconfiguration message.
Step 606: Apply a default SRB configuration, a default RLC configuration and a default logical channel configuration for at least one SRB according to at least one srb-Identity value in the SRB configuration, if the SRB configuration is the srb-ToAddModList.
Step 608: Apply the default SRB configuration, the default RLC configuration and the default logical channel configuration for a SRB1, if the SRB configuration is the srb-ToAddModList-NB.
Step 610: End.

[0026] According to the process 60, a UE in a RRC_CONNECTED mode receives a RRC connection reconfiguration message from a network. The RRC connection reconfiguration message indicates a full configuration (e.g., the message including a "fullConfig" set to TRUE), and comprises a SRB configuration. After receiving the RRC connection reconfiguration message from the network, the UE checks whether the SRB configuration is a srb-ToAddModList or a srb-ToAddModList-NB. If the SRB configuration is the srb-ToAddModList, the UE applies a default SRB configuration, a default RLC configuration and a default logical channel configuration for at least one SRB according to (e.g., corresponding to) at least one srb-Identity value in the SRB configuration. If the SRB configuration is the srb-ToAddModList-NB, the UE applies the default SRB configuration, the default RLC configuration and the default logical channel configuration for a SRB1.

[0027] In one example, the UE is a NB-IoT UE or a LTE UE that supports at least one NB-IoT capability. In one example, the UE further applies the default SRB configuration, the default RLC configuration and the default logical channel configuration for all SRBs supported by the UE. In one example, the RRC connection reconfiguration message is a RRCConnectionReconfiguration message or a RRCConnectionReconfiguration-NB message.

[0028] Examples for illustrating correspondence between srb-Identity value(s) and SRB(s) in at least one of the process 40, 50 and 60 are described as follows. In one example, if the srb-Identity value is 2, the UE applies the default SRB configuration, the default RLC configuration and the default logical channel configuration for a SRB 2 (SRB2). In one example, if the SRB configuration includes a first srb-Identity value which is 1 and a second srb-Identity value which is 2, the UE applies the default SRB configuration, the default RLC configuration and the default logical channel configuration for the SRB1 and the SRB2.

[0029] Those skilled in the art should readily make combinations, modifications and/or alterations on the abovementioned description and examples. The abovementioned description, steps and/or processes including suggested steps can be realized by means that could be hardware, software, firmware (known as a combination of a hardware device and computer instructions and data that reside as read-only software on the hardware device), an electronic system, or combination thereof. An example of the means may be the communication device 20. Any of the above processes and examples above may be compiled into the program code 214.

[0030] To sum up, the present invention provides a device and a method for handling a NB-IoT communication. Correct operations can be performed after receiving a RRC connection reconfiguration message. Thus, the problem in the art is solved.

[0031] Those skilled in the art will readily observe that numerous modifications and alterations of the device and method may be made while retaining the teachings of the invention. Accordingly, the above disclosure should be construed as limited only by the metes and bounds of the appended claims.

Claims

1. A communication device for handling a signaling radio bearer, SRB, for a narrowband internet of things, NB-IoT, communication, comprising:

a storage device (210) for storing instructions;

and
a processing circuit (200), coupled to the storage unit (210), wherein the storage unit (210) stores, and the processing circuit (200) is configured to execute, the instructions of:

receiving a RRCConnectionReconfiguration-NB message from a network, when the communication device is in a RRC_CONNECTED mode, wherein the RRCConnectionReconfiguration-NB message indicates a first full configuration and comprises a first SRB configuration; and
applying a default SRB configuration, a default RLC configuration and a default logical channel configuration for a SRB 1 (SRB1) according to the SRB configuration, when receiving the RRCConnectionReconfiguration-NB message.

2. The communication device of claim 1, wherein the storage device (210) further stores, and the processing circuit (200) is further configured to execute, instructions of:

receiving a RRCConnectionReconfiguration message from the network, when the communication device is in the RRC_CONNECTED mode, wherein the RRCConnectionReconfiguration message indicates a second full configuration and comprises a second SRB configuration comprising at least one SRB identity; and
applying the default SRB configuration, the default RLC configuration and the default logical channel configuration for at least one SRB according to the at least one SRB identity.

3. The communication device of claim 1, wherein the communication device supports at least one NB-IoT capability.

4. The communication device of claim 1, wherein the storage device further stores, and the processing circuit (200) is further configured to execute, an instruction of:

applying the default SRB configuration, the default RLC configuration and the default logical channel configuration for all SRBs supported by the communication device.

5. A communication device for handling a signaling radio bearer, SRB, for a narrowband internet of things, NB-IoT, communication, independently or according to claim 1, comprising:

a storage device (210) for storing instructions;
a processing circuit (200), coupled to the storage unit (210), wherein the storage unit (210) stores, and the processing circuit (200) is configured to execute, the instructions of:

receiving a RRC connection reconfiguration message from a network, when the communication device is in a RRC_CONNECTED mode, wherein the RRC connection reconfiguration message indicates a full configuration and comprises a SRB configuration;
checking whether there is any srb-Identity value comprised in the SRB configuration or not, after receiving the RRC connection reconfiguration message;
applying a default SRB configuration, a default RLC configuration and a default logical channel configuration for at least one SRB according to at least one srb-Identity value in the SRB configuration, when there is the at least one srb-Identity value comprised in the SRB configuration; and
applying the default SRB configuration, the default RLC configuration and the default logical channel configuration for a SRB1, when there is no srb-Identity value comprised in the SRB configuration.

6. The communication device of claim 5, wherein the RRC connection reconfiguration message is a RRCConnectionReconfiguration message or a RRCConnectionReconfiguration-NB message.

7. The communication device of claim 5, wherein the SRB configuration is a srb-ToAddModList or a srb-ToAddModList-NB.

8. The communication device of claim 5, wherein the communication device supports at least one NB-IoT capability.

9. The communication device of claim 5, wherein the storage device (210) further stores, and the processing circuit (200) is further configured to execute, an instruction of:

applying the default SRB configuration, the default RLC configuration and the default logical channel configuration for all SRBs supported by the communication device.

10. A communication device for handling a signaling radio bearer, SRB, for a narrowband internet of things, NB-IoT, communication, independently or according to claim 1 or claim 5, comprising:

a storage device (210) for storing instructions;
a processing circuit (200), coupled to the storage unit (210), wherein the storage unit (210) stores,

and the processing circuit (200) is configured to execute, the instructions of:

receiving a RRC connection reconfiguration message from a network, when the communication device is in a RRC_CONNECTED mode, wherein the RRC connection reconfiguration message indicates a full configuration and comprises a SRB configuration;
checking whether the SRB configuration is a srb-ToAddModList or a srb-ToAddModList-NB, after receiving the RRC connection reconfiguration message;
applying a default SRB configuration, a default RLC configuration and a default logical channel configuration for at least one SRB according to at least one srb-Identity value in the SRB configuration, if the SRB configuration is the srb-ToAddModList; and
applying the default SRB configuration, the default RLC configuration and the default logical channel configuration for a SRB1, if the SRB configuration is the srb-ToAddModList-NB.

11. The communication device of claim 10, wherein the RRC connection reconfiguration message is a RRCConnectionReconfiguration message or a RRCConnectionReconfiguration-NB message.

12. The communication device of claim 10, wherein the communication device supports at least one NB-IoT capability.

13. The communication device of claim 10, wherein the storage device (210) further stores, and the processing circuit (200) is further configured to execute, an instruction of:

applying the default SRB configuration, the default RLC configuration and the default logical channel configuration for all SRBs supported by the communication device.

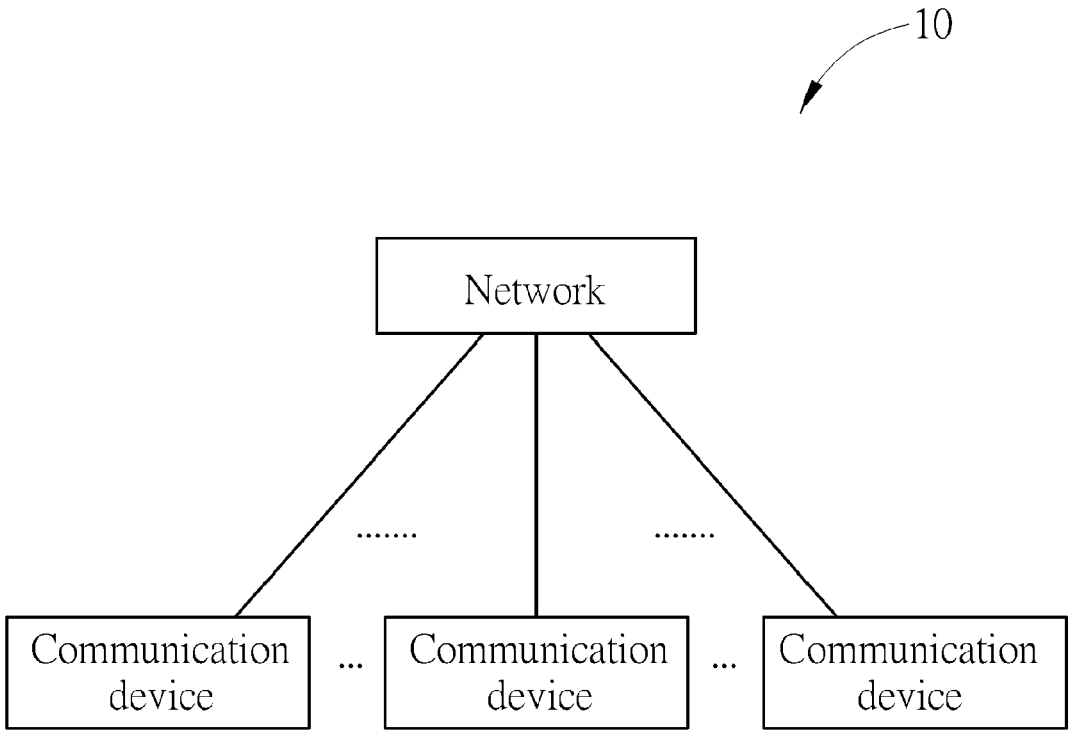
10
Network
.....
.....
Communication device
...
Communication device
...
Communication device

FIG. 1

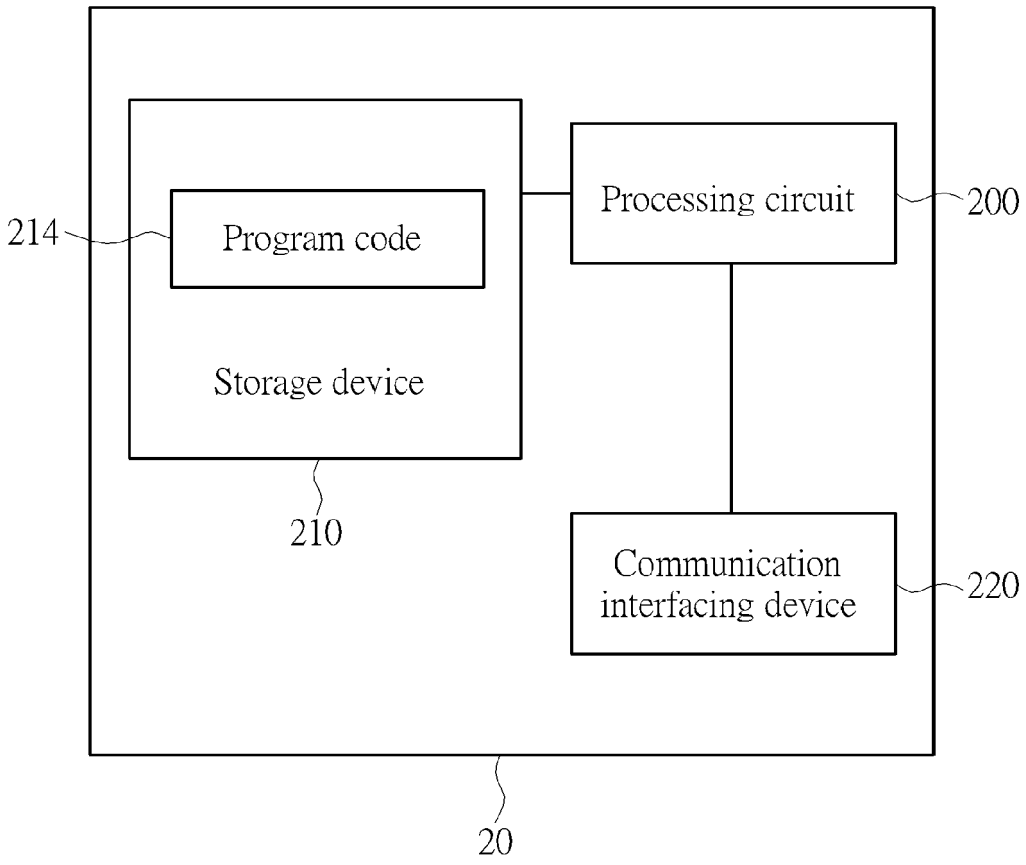
214
Program code
Storage device
210
Processing circuit
200
Communication interfacing device
220
20

FIG. 2

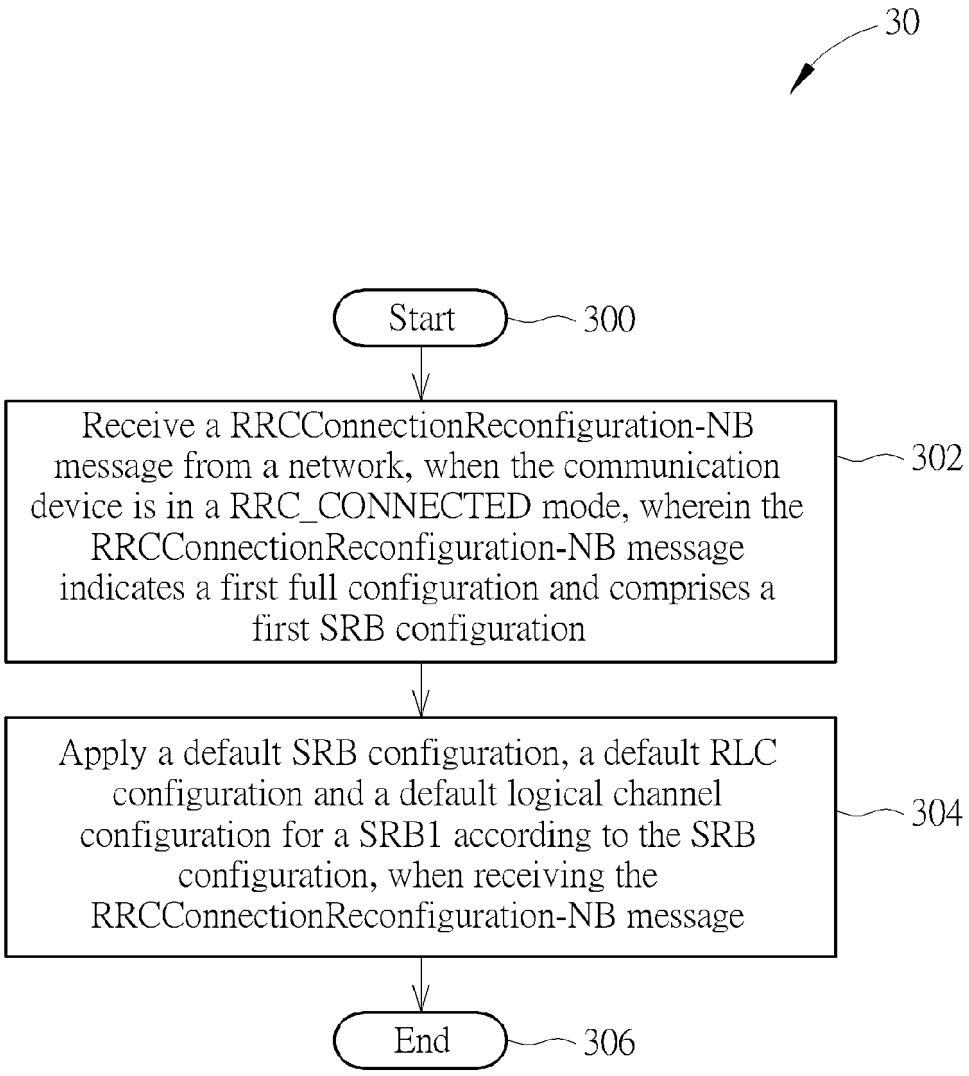
30
Start
300
Receive a RRCConnectionReconfiguration-NB message from a network, when the communication device is in a RRC_CONNECTED mode, wherein the RRCConnectionReconfiguration-NB message indicates a first full configuration and comprises a first SRB configuration
302
Apply a default SRB configuration, a default RLC configuration and a default logical channel configuration for a SRB1 according to the SRB configuration, when receiving the RRCConnectionReconfiguration-NB message
304
End
306

FIG. 3

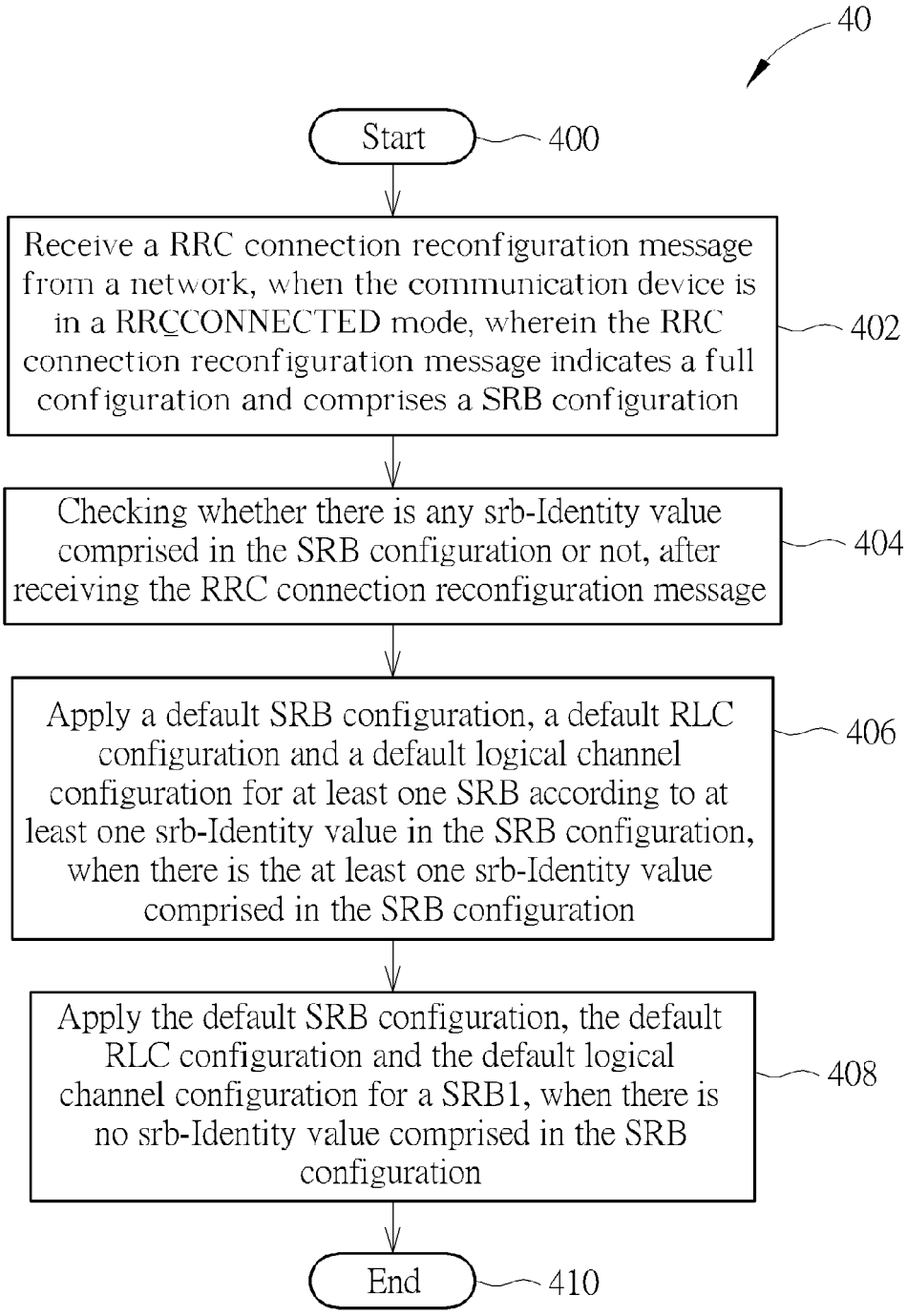
40
Start
400
Receive a RRC connection reconfiguration message from a network, when the communication device is in a RRC_CONNECTED mode, wherein the RRC connection reconfiguration message indicates a full configuration and comprises a SRB configuration
402
Checking whether there is any srb-Identity value comprised in the SRB configuration or not, after receiving the RRC connection reconfiguration message
404
Apply a default SRB configuration, a default RLC configuration and a default logical channel configuration for at least one SRB according to at least one srb-Identity value in the SRB configuration, when there is the at least one srb-Identity value comprised in the SRB configuration
406
Apply the default SRB configuration, the default RLC configuration and the default logical channel configuration for a SRB1, when there is no srb-Identity value comprised in the SRB configuration
408
End
410

FIG. 4

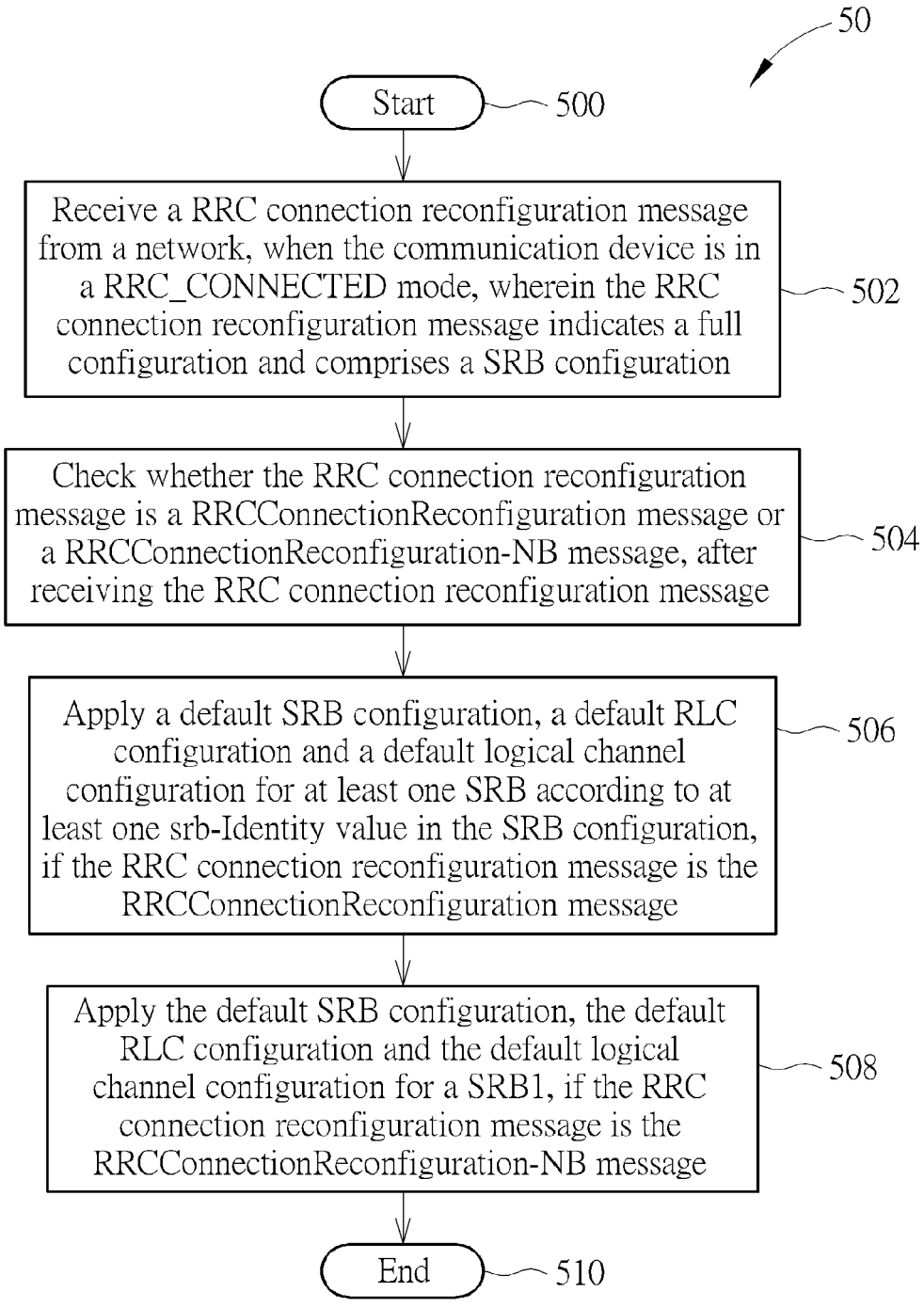
50
Start
500
Receive a RRC connection reconfiguration message from a network, when the communication device is in a RRC_CONNECTED mode, wherein the RRC connection reconfiguration message indicates a full configuration and comprises a SRB configuration
502
Check whether the RRC connection reconfiguration message is a RRCConnectionReconfiguration message or a RRCConnectionReconfiguration-NB message, after receiving the RRC connection reconfiguration message
504
Apply a default SRB configuration, a default RLC configuration and a default logical channel configuration for at least one SRB according to at least one srb-Identity value in the SRB configuration, if the RRC connection reconfiguration message is the RRCConnectionReconfiguration message
506
Apply the default SRB configuration, the default RLC configuration and the default logical channel configuration for a SRB1, if the RRC connection reconfiguration message is the RRCConnectionReconfiguration-NB message
508
End
510

FIG. 5

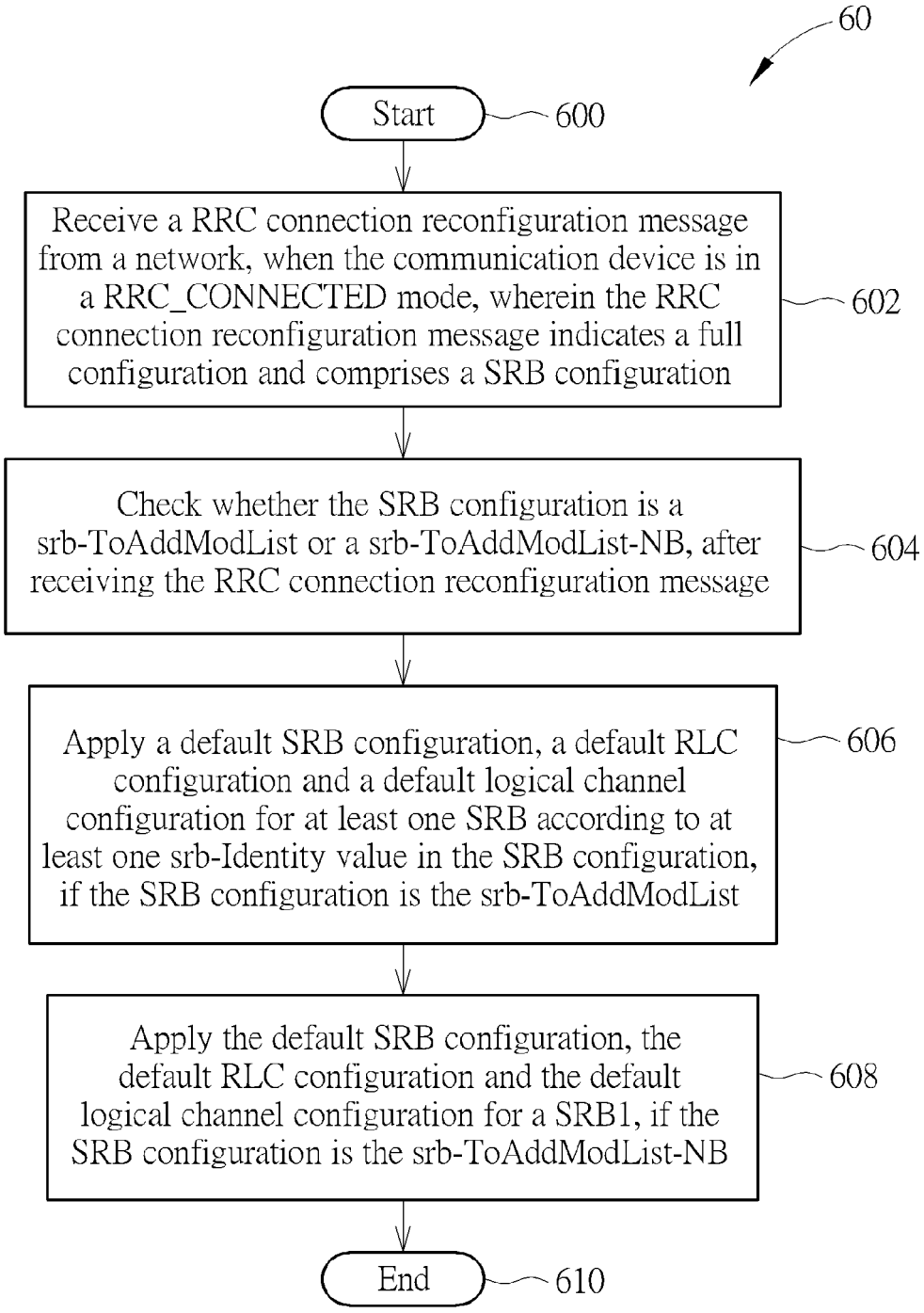
60
Start
600
Receive a RRC connection reconfiguration message from a network, when the communication device is in a RRC_CONNECTED mode, wherein the RRC connection reconfiguration message indicates a full configuration and comprises a SRB configuration
602
Check whether the SRB configuration is a srb-ToAddModList or a srb-ToAddModList-NB, after receiving the RRC connection reconfiguration message
604
Apply a default SRB configuration, a default RLC configuration and a default logical channel configuration for at least one SRB according to at least one srb-Identity value in the SRB configuration, if the SRB configuration is the srb-ToAddModList
606
Apply the default SRB configuration, the default RLC configuration and the default logical channel configuration for a SRB1, if the SRB configuration is the srb-ToAddModList-NB
608
End
610

FIG. 6

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EUROPEAN SEARCH REPORT

Application Number
EP 17 18 5398

DOCUMENTS CONSIDERED TO BE RELEVANT

Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (IPC)
X	ALCATEL-LUCENT ET AL: "Comments and suggestions on baseline RRC CR for DC", 3GPP DRAFT; R2-145109-DC-RRC-CR-COMMENTS-V2, 3RD GENERATION PARTNERSHIP PROJECT (3GPP), MOBILE COMPETENCE CENTRE ; 650, ROUTE DES LUCIOLES ; F-06921 SOPHIA-ANTIPOLIS CEDEX ; FRANCE , vol. RAN WG2, no. San Francisco, USA; 20141117 - 20141121 8 November 2014 (2014-11-08), XP050886672, Retrieved from the Internet: URL:http://www.3gpp.org/ftp/tsg_ran/WG2_RL2/TSGR2_88/Docs/ [retrieved on 2014-11-08]	1,2,4-7, 9-11,13	INV. H04W76/00
Y	* page , sub-section 4.2.2; page , sub-section 5.3.5.8; page 45; *	3,8,12	
Y	WO 2015/163625 A1 (LG ELECTRONICS INC [KR]) 29 October 2015 (2015-10-29)	3,8,12	TECHNICAL FIELDS SEARCHED (IPC)
A	* paragraphs [00121], [00155], [00157] *	1,2,4-7, 9,11,13	H04W

-/--

The present search report has been drawn up for all claims

Place of search	Date of completion of the search	Examiner
Munich	11 December 2017	Murgan, Tudor A.

CATEGORY OF CITED DOCUMENTS

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Application Number
EP 17 18 5398

DOCUMENTS CONSIDERED TO BE RELEVANT

Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (IPC)
T	HTC ET AL: "Support of full configuration per CG", 3GPP DRAFT; R2-1711666 SUPPORT OF FULL CONFIGURATION PER CG, 3RD GENERATION PARTNERSHIP PROJECT (3GPP), MOBILE COMPETENCE CENTRE ; 650, ROUTE DES LUCIOLES ; F-06921 SOPHIA-ANTIPOLIS CEDEX ; FRANCE , vol. RAN WG2, no. Prague, Czech Republic; 20171009 - 20171013 29 September 2017 (2017-09-29), XP051355707, Retrieved from the Internet: URL:http://www.3gpp.org/ftp/tsg_ran/WG2_RL2/TSGR2_99bis/Docs/ [retrieved on 2017-09-29] * page 1 - page 3 *	1-13	
A	US 2016/174281 A1 (WEN PINGPING [CN] ET AL) 16 June 2016 (2016-06-16) * paragraph [[0158]] - paragraph [[0162]] *	1-13	TECHNICAL FIELDS SEARCHED (IPC)
A	US 2015/146617 A1 (PARK SUNGJUN [KR] ET AL) 28 May 2015 (2015-05-28) * paragraph [[0143]]; table 1 *	1-13	

The present search report has been drawn up for all claims

Place of search	Date of completion of the search	Examiner
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This annex lists the patent family members relating to the patent documents cited in the above-mentioned European search report. The members are as contained in the European Patent Office EDP file on
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11-12-2017

Patent document cited in search report	Publication date	Patent family member(s)	Publication date
WO 2015163625 A1	29-10-2015	US 2017181206 A1	22-06-2017
		WO 2015163625 A1	29-10-2015
		WO 2015163639 A1	29-10-2015
US 2016174281 A1	16-06-2016	CN 104349389 A	11-02-2015
		EP 3028524 A2	08-06-2016
		KR 20160037212 A	05-04-2016
		US 2016174281 A1	16-06-2016
		WO 2015015293 A2	05-02-2015
US 2015146617 A1	28-05-2015	DE 112013003044 T5	05-03-2015
		US 2015146617 A1	28-05-2015
		WO 2014025141 A1	13-02-2014

EPO FORM P0459

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